Sidney Kark’s contributions to epidemiology and community medicine

From JD KARK and JH ABRAMSON

Sirs—It was gratifying to see recognition of the relevance of Sidney Kark’s 1949 paper on ‘The social pathology of syphilis in Africans’, republished in the International Journal of Epidemiology on the fifth anniversary of his death, to the ongoing AIDS epidemic.1 We would like to add some historical and biographical context that may be helpful as a background to his concepts and contribution.

South Africa in the 1940s had become a major conceptual leader in the development of what later became known as community-oriented primary care, or COPC (although Sidney Kark preferred to call it community-oriented primary health care, or COPHC) as an effective mode of delivery of health services to the population. This found expression in the establishment in 1940 by the Health Ministry, ably led by Eustace Cluver and Harry Gear, of a demonstration health centre in a rural Zulu community (the Pholela Health Centre which Sidney Kark headed),2 the Gluckman Commission’s farseeing recommendation in 1945 of a nationwide network of community health centres,3 the establishment in 1946 of the Institute for Family and Community Medicine (IFCH) in Durban (headed by Sidney Kark) to train doctors, nurses, community health educators, and other personnel to work in these centres, the development of more than 40 centres (of the over 200 planned) under the administration of the outstanding David Landau, and the establishment in 1954 of the Department of Social, Preventive and Family Medicine chaired by Sidney Kark at the Natal University Medical School in Durban. This latter appointment was made by the founding Dean, George Gale, a man of unique qualities, who together with Henry Gluckman profoundly influenced the initiation of the South African Health Centre movement. The IFCH stood out in the South Africa of those days as a non-racist institution with a multiracial teaching staff and multiracial trainees, providing service demonstrations to African, Indian, Coloured, and White communities. Application of the COPC concept withered with the advent of the apartheid regime that came into power in 1948. Sidney Kark left South Africa in 1958 to become founding chairman of the Department of Epidemiology at the School of Public Health at the University of North Carolina in Chapel Hill, and, as planned, departed for Jerusalem a year later, leaving John Cassel—a colleague of his in Durban and Pholela, who subsequently became one of the great social epidemiologists—in charge. It was in this South African context, with its inequalities, cultural differences, and striking differences in health patterns, that Sidney Kark crystallized the ideas that formed the basis for his seminal textbooks on epidemiology and community-oriented health care.4–7 The story of these years is told in some detail in Sidney and Emily Kark’s Promoting Community Health: From Pholela to Jerusalem.8

Sidney Kark’s broad view of the social, cultural, economic, and political determinants of health was influenced by his exposure to liberal teachers at the University of the Witwatersrand in the 1930s (ref. 8, Ch. 1) and his socialist philosophy, by his observations in Pholela and in the national nutritional survey of African schoolchildren that preceded his Pholela experience, by his studies of social anthropology at Oxford in 1947–1948, and by the thinking of the liberal politician Jan Hofmeyr, Albert Luthuli, and others. This awareness found expression when he was still a medical student in his publication of papers on ‘The economic factor in the health of the Bantu in South Africa’9 and ‘Problems of national health’,10 and his setting up, together with Emily Kark, of a ‘Society for the Study of Medical Conditions Among the Bantu’. He and Emily stressed that:

the influence of the University of Witwatersrand [in the 1930s] was a dominant factor in our development towards a philosophy of life which shaped our subsequent activities as doctors and educators … The atmosphere created by the Arts faculty of the University inspired us to ways of thinking about South Africa and its peoples and widened our horizons beyond anything of which we had previously been conscious.8

Leaders in the humanities such as RFA Hoernle, Winifred Hoernle, JD Rheinhold Jones, Edith Rheinhold Jones, and the historian WM MacMillan, and in the medical faculty—Raymond Dart (the renowned physical anthropologist), Joseph Gillman, WH Craib, and Eustace Cluver—were particularly influential.8

This broad view of the determinants of health found expression in Sidney Kark’s concept of community health syndromes, expressing the complex of diseases and other health conditions in a specific community, its causal factors, and the interrelationships among these health conditions and among these factors, and between the health conditions and the causal factors. An example is the syndrome of malnutrition, infectious diseases (including syphilis), and disturbances of mental health that dominated rural South Africa5 (Figure). This syndrome was driven by the social and political implications of migrant labour with its devastating consequences on rural food production, impoverishment, malnutrition, transmission of infectious diseases, and family functioning. The Pholela Health Centre’s programme for tackling the nutritional component of this syndrome focused not only on individual care, but on the demonstration of agricultural techniques such as contour ploughing and the making of compost, home vegetable growing, the introduction of higher-yield poultry, bulk buying of milk powder, school feeding, and the setting up of seed-buying clubs, a farmers’ association, and local markets for home produce.4,8

This holistic thinking found practical expression in Sidney Kark’s emphasis on integrated curative, preventive, and promotive care, on the integration of individual and family care with community care, on the community’s participation in its own health care, on the contribution of the social sciences to health care, on the role of community health workers and health educators, on the importance of multisectoral collaboration, on community diagnosis (using both quantitative and qualitative methods) as a basic tool in health care, on planned interventions
Loss of skilled farmers

Men away from home

Migrant labor

Rural → Urban

Mental health

Community syndrome

Infectious disease

Poverty, malnutrition

Poor agricultural methods

Soil erosion

Low food production

Figure  The determinants of a community syndrome of malnutrition, communicable diseases, and mental ill-health in a rural area in South Africa ~1940. The collapse of successful farming. (Distant but powerful upstream determinants of the Community Syndrome were the Glen Gray Act [1894] intended to promote cheap labour for industry by taxing those in the non-monetary subsistence [rural] economy and the Native Land Act [1913], which forced ~85% of the population onto 10–15% of the land.)


based on evidence, on the formulation of community programmes to deal with specific problems, and on the role of ongoing collection of epidemiological data to evaluate these programmes. The ‘multi-tier’ approach of COPC—its consideration of causes and interventions at different levels of organization—can be seen as a forerunner of modern approaches and ‘new paradigms’ in epidemiological thinking (e.g. the Sussers’ ‘Chinese boxes and eco-epidemiology’ concept11), and of what is often referred to as ‘the New Public Health’, reflecting ‘the adoption by public health of a broader social model of the causes of ill-health and appropriate interventions’.12

Upon arrival in 1959 in Israel, where the years since the establishment of the State in 1948 had witnessed an intensive development of health services, Sidney Kark and a multidisciplinary team of his colleagues from Durban established— with the strong support and foresight of the then Director-General of the Hadassah Medical Organization, Kalman J Mann—the Department of Social Medicine (of the Hebrew University and Hadassah), which within two years had developed an MPH course that to date has about 1200 Israeli and international graduates, and in which epidemiology and COPC were central features. The department was soon recognized by WHO as a school of public health, and the Kiryat Hayovel Community Health Centre in Jerusalem became the base in which COPC was practised, tested, demonstrated, and taught to public health, medical, nursing, and other students. In 1980, almost 20 years after the inception of the MPH course, the present School of Public Health and Community Medicine was formalized, with the Department of Social Medicine at its core.

The wide dissemination of Sidney Kark’s ideas has been well documented (see, for example, a recent symposium in the American Journal of Public Health13). He strongly felt that the practice of COPC should be tailor-made to local circumstances and adapted to the needs of different populations, poor or affluent, and to different health care systems and their constraints and opportunities. If he were alive he would be happy to see the many different incarnations of COPC in different parts of the globe; although he might have some difficulty in recognizing some of them as COPC, particularly those that lack the epidemiological underpinning that he stressed as a cardinal feature of COPC.

Sadly, COPC has gone into eclipse in Jerusalem. COPC is still taught, at least to international students, and international contacts continue, but a few years ago the Kiryat Hayovel Health Centre was lost, and the practice of COPC is no longer visible here. And after 45 years, the Department of Social Medicine itself, notwithstanding its world-wide recognition, has now been disbanded by the Hadassah Medical Organization, whose focus of interest lies in tertiary-care medicine.
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Endpoints is more complex (and perhaps less causal) than adult life. However, the relation of birthweight to these health mortality and morbidity—correlations that extend even into correlation between low birthweight (LBW) and high perinatal morbidity and mortality. This has been justified by the widely accepted as a population-level marker for perinatal health.

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We offer the following statement on birthweight as a consensus developed at a retreat held 8–9 June 2002 at Sostrup Slot, and presented at the Second Nordic Epidemiologic Conference in Aarhus, Denmark. It is our hope that this statement might provoke constructive discussion of the limits of LBW as an epidemiological measure, and an exploration of possible alternatives.

References


Sostrup statement on low birthweight

From MELISSA ADAMS,1 ANNE-MARIE NYBO ANDERSEN,2 PER KRAGH ANDERSEN,3 DAVID HAIG,4 TINE BRINK HENRIKSEN,5 IRVA HERTZ-PICCIOTTO,6 ROLV TERJE LIE,7 JØRN OLSEN,8 ROLV SKJÆRVEN9 and ALLEN WILCOX10

Sirs—Birthweight data are available in most countries and have been used extensively in perinatal monitoring and in research. The per cent of babies born low weight (<2500 g) has been widely accepted as a population-level marker for perinatal morbidity and mortality. This has been justified by the correlation between low birthweight (LBW) and high perinatal mortality and morbidity—correlations that extend even into adult life. However, the relation of birthweight to these health endpoints is more complex (and perhaps less causal) than simple correlations imply.

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‘Per cent low birthweight’ is a poor index of a population’s perinatal health

The per cent LBW is a simple and time-honoured tool for monitoring aspects of perinatal health around the globe. However, epidemiological research has shown that per cent LBW can be misleading. For example, the per cent LBW can be affected by a change of mean birthweight. Changes in mean weight can reflect physiological changes that do not necessarily affect health.

For purposes of surveillance, per cent LBW should be de-emphasized in favour of other population measures. In principle, these alternatives include rates of fetal and infant mortality, and direct indicators of infant health and development. Preterm delivery (even a rough surrogate such as the residual distribution based on the complete birthweight distribution) is a better health indicator than LBW.

We recognize that any change in the monitoring of health in less-developed countries requires redirection of scarce resources. In practice, therefore, research is needed to determine which of the possible measures of perinatal health are the most useful and feasible.

In population studies, ‘per cent low birthweight’ is a poor research tool for detecting factors or conditions that damage perinatal health

LBW babies comprise a mix of preterm delivery, decreased fetal growth, and genetically small body size (a physiologically normal feature). The first of these conditions (preterm delivery) is a measure of poor infant health. Babies delivered preterm are typically at a disadvantage either because of early delivery itself